

INDEX

Note.—Illustrated articles are marked with an asterisk (*). Look for the general subject rather than the supposed specific title of any article. Thus, "Aeronautics," "Automobiles," "Meteorology," "Panama Canal," etc., will give related articles much more quickly than by reference to the title.

- A**
ADDING MACHINE, MONSTER* 515
ADVERTISING.
 Monster adding machine. *315
 Stationary signs, animating. *322
AERONAUTICS. See also WAR, THE
ACCIDENTS.
 Christmas strutless biplane. 589
 How to make airplane safe. 225, 541
BALLOONS.
 Aerial bus. *632
 Aerial greyhounds of tomorrow. 391, 400
 Airship problem, solution of. 73
 Britain's monster dirigibles. 311
 Dirigibles, armed. *691
 Dirigibles, mooring towers for. 621
 Is dirigible outstripping airplane? 365
 Life raft, emergency. 547
 Sins urge rigid airships. 333
 Trans-Atlantic dirigible entry. *549
 Zeppelin sheds, Germany. *343
CONSTRUCTION.
 Airplane timber, our. 113
 Ford of the air. 113
 Instability of our airplanes. 118
 Martindale trans-Atlantic. *469
 Propellers, molded. 349
 Propellers, waterproofing. 349
 Testing to preclude accidents. 249
 To make airplanes safe. 483, 573
 Trans-Atlantic flight airplanes. *202
 Wings of metal. *93
FLIGHTS, ETC.
 Airplane parachute prize. 113
 Airplanes for trans-Atlantic flight. *202
 Altitude record, new. 165, 649
 Always on its toes. 648
 America flies the Atlantic. *904
 Chicago-New York flight. 481
 Cockpit of trans-Atlantic sea planes. *547
 Crossing highest Andes. 113
 England to India by airplane. 461
 Lessons of the trans-Atlantic. 306
 London-Cape Town flight. 393
 Naval plans for trans-Atlantic. 311
 Navy's bid for trans-Atlantic. *479
 Passenger-carrying record. 649
 Pioneers flight, London. 649
 Race to the North Pole. 69
 Record of 150 loops. 113
 Safety and comfort competition. 649
 Small airplanes and trans-Atlantic flight. *427
 Trans-Atlantic dirigible entry. *333
 Trans-Atlantic flights, fares for. 393
 Trans-Atlantic flight, 190, 332, 680
 Trans-Atlantic flight, oddities of. 574
 Trans-Atlantic hoax. 117
 Trans-Atlantic, non-stop. *651
 Trans-Atlantic seaplane of future. *633
 Weather man and ocean flying. 452
GENERAL.
 Aerial police. 307
 Airplane express. 163
 Airplane, launching, from airship. *111
 Airplane research of value in other fields. 674
 Airplanes for sustenance. 404
 Airplanes, tractors to haul. 404
 Airship vs. airplane. 908
 Air-traffic regulation. 481
 Altitude—effect on eye. 21
 British flying, future of. *259
 Civilian aviation. 309
 Civilian flying. 481
 Commercial planes. 249
 England-Belgium service. 311
 Every man's airplane. *203
 Exploring by airplane. 165
 Exposition, Aeronautical. 137
 Flying experience without leaving ground. *547
 Free as air. *404
 Future of aircraft. 625
 German aircraft for peace. 89
 Giant Farman machine. 249
 Government sales of planes. 393
 Landing on a roof. *139
 Mail service. Army and. 112
 New York Exposition. 370, 290
 Passenger air liner. 481
 Passengers in place of bombs. *203
 Popularizing aviation. 424
 Review of year 1918. 9
 Safe plane at low price. *512
 Seaplanes for fishing. 332
 Speaking tube for airships. *346
 Stopping engine automatically when propeller breaks. *468
 Weather forecast for fliers. 69
 Wind currents, determination of. 620
 Wireless telephony. *95
MILITARY.
 Abandoned aviation fields. 569
 Aircraft, our giant. 7
 Airman's story, an. *426
 Airplanes by the hundreds. *173
 American naval aviators. 481
 Argentina's instructors. 649
 Battleplane armament. 569
 Brazil's aviation service. 569
 British air force. 249
 Casualties in A. E. F. 393
 England's aircraft industry. 314
 French's record. 113
 French seaplanes, work of. *226
 German air service. 249
 Giant flying boats in aviation. 65
 Gotha for England. 311
 Making machine gun shoot pictures. *545
 Martin bombing plane. 165
 Navy airplanes in war, our. 188
 Operating room, flying. *813
 Our achievements in aviation. 65
 Our air service for peace. 393
 Peace treaty and German aviation. 649
 Pulling trigger by fluid pressure. *512
 Radio telephony: range finding. 569
 Seagull flies. 488
 Shooting stars. *79
 Torpedoed plane of reality. 95
 Towing barge for naval planes. *909
 What are airmen going to do? 393
 Zeppelins as naval scouts. 425
- MOTORS.**
 Airplane and automobile. 136
 Battery vs. magnet. 93
 Langley-Manley engine. 625
 Self-starter of Liberty engine. 165
 "Supercharged" engine. *312
AGRICULTURE.
 Aerial police. 307
 Attachments, plow. 429
 Barn arrangements, efficient. 339
 Bean harvesting attachment. *607
 Boy-power, harnessing. 100
 Cattle food, seaweed as. 481
 Concrete pit saves money. *584
 Cornbinder loading device. *30
 Crop growing on contract. 536
 Ditch saving the farmer. 122
 Ditch, open, improving. *30
 Drain tile, cement. 30
 Dynamiting devastated orchards. 111
 Electro culture, theory of. 530
 Farming for returned soldiers. 309
 Farming implements. 169
 Farm kitchen equipment. 122
 Farm labor to cure cripples. *342
 Fertilizing, dynamite and. 429
 Gasoline horse, one-horse. *30
 Grain binder troubles. 607
 Hay-loading rack, movable. *607
 International Institute. 248, 281
 Irrigation scheme, ingenious. 122
 Keeping farm roads fit. *122
 Lady bugs to fight aphids. *507
 Locust, return of 17-year. *316
 Mechanical equipment of the farm. *30, *122, *376, *490, *607
 Motor cultivator, uses for. *232
 On leaf poisoning of animals. 369
 Plowing and harrowing at once. *610
 Roller bearings in machinery. 490
 Seeds, electrification of. 142
 Ships' ballast and plant pests. 569
 Shovel, automatic. 429
 Soil, atmosphere of the. 429
 Soil, how to build. 509
 Soil surveys, U. S. 113
 Supplying British farmer with sinews of war. 429
 Tanks turned into tractors. 113
 Tractor, rubber-tired. *122
 Tractors, official list of farm. 232
 Turnseed becomes a crop. 429
 Wartime agriculture, Gt. Britain. 26
 Weeds, killing, with steam. *599
 Wheat, much—little corn. 600
ALCOHOL.—an absurd figure. 691
ALCOHOL from white moss. 365
ALLOY, NEW. *207
ALPHABET, A PHONETIC. 253
ANIMALS.
 Dogs of war. *10
 Mules, shower bath for. *634
 Statues, new, islands of. 79
 Question of identity. *570
 Rabies and public health problem. 644
 Society of Mammalogists. 505
 Ticks as disease carriers. *286
 Vampire bat. *254
 Water Monitor. 15
 Whale, "killer". *491
 Wild life reservations. 221
ARCHAEOLOGY.
 Archaeologist in Mesopotamia. *506
 Cihola revealed. *24
ARCTIC. See EXPLORATION.
ARMY. See NATIONAL DEFENSE, WARFARE, AND U. S. THE EUROPEAN.
 Armies, French. *686
ART TREASURES, restoring. 167
ASH removal by suction. 661
ASTRONOMY.
 Four periodic comets. 649
GENERAL.
 Adolfo Stahl lectures. 537
 American Astronomical Society. 49
 Bright night sky, England. 49
 British schools. 137
 "Bull," latest. 393
 Complaint from southern hemisphere. 537
 Day, astronomical. 649
 Heavens month by month. *14, *102, *224, *320, *466, *580, *692
 Lantern slides. 537
 Longitudes, Bureau of. 224
 Meteorites in strata. 537
 Observing, new ideas in. 49
 Review of year 1918. 9
 Sky, dark markings in. 649
COMETS.
 Mount Wilson drops "Solar". 311
 New observatory, Arizona. 197
PLANETS.
 Diameters, determining. 393
 Jupiter, prominence on. 393
 Planets month by month. *14, *102, *224, *320, *466, *580, *692
 Venus. *224, *320, *466, *580, *692
STARS.
 Andromeda, variable in. 49
 Beta Cygni probably triple. 537
 Cepheid variables. 311
 Globular clusters. 311
 Helium star. 137
 Interstellar media. 197
 Mira Ceti, variations of. 49
 Nova, Andromeda nebula. 197
 Occulted by Martian atmosphere. 311
 Planetary nebulae, size of. 197
 Radial velocity, highest. 393
 Star colors. 679
 Southern double stars. 137
SUN.
 Corona observations. 393
 Solar rotation, problem of. 197
 Total eclipse of May 29th. 49, 311
 Weather data needed. 197
ATHLETES, AN ARMY OF how Uncle Sam has created. *114
AUTOMOBILES.
ACCESSORIES AND HUNDRIES.
 Anti-freezing mixtures. 49
 Circuit, adjustable. *148
 Horn and lamp, combined. *79
 Jack, indoor. *693
 Lubricating the car. 113
 Oil vs. grease. 113
 Radiators, care of. 49
 Tools, special, for repair. 537
 Wheel that floats. 201
 Wick oiling for chassis. 453
ENGINES.
 "After the war" engines. 221
 Airplane and automobile. 136
 Airplane engines for cars. 221
 Airplane type, pleasure car. 221
 Compression gas, simple. 453
 Cooling system precautions. 333
 Crank case, breathing. 685
 Dual valves, adopts. 537
 Fuel heated three times. 60
 Kerosene engine, oil-cooled. 27
 Top speed, meaning of. 113
 Starting in cold weather. 221
 Starting trouble. 221
 Valve operating system depreciation. 621
FUELS.
 Cheap fuel. 113
 Supply, declining. 220
GENERAL.
 Absence of freaks. 154
 Accident, odd. *307
 Activity in invention. 311
 Buying, stimulating. 311
 Careless America. 137
 Crankshafts, finishing. 124
 Far Eastern demand. *124
 First aid to motorists. *584
 Lighting a driveway. *486
 Lubricant testing machine. 621
 150 miles per hour on wheels. *223
 Post-war models, England. 49
 Public interest in automobiles. 136
 Trucks, circumventing. 393
 Tourist, motor, for the. *623
 Trade reports, optimistic. 621
PLEASURE CARS.
 Cheap cars for Europe. 311
 Closed bodies popular. 537
 Plan \$250 automobile. 311
TRUCKS.
 Armor for the tire. *532
 Capitalizing rare experience. 311
 Testing tires on factory roof. *461
 Tire mileage sells cars. 393
TRACTORS.
 After-war demand, Italy. *60
 Airplanes, tractors to haul. 404
 Bull gear drive housing. 148
 Climbing Mt. Wilson. 148
 Dynamometer, new tractor. *376
 Farm tractors, official list. 232
 Tank: invention that won war. *438
 Tank man's story. *482
 Tanks turned into farm tractors. 113
 Teaching wounded soldiers. *691
 Track-laying tractor, new. *662
TRUCKS.
 Clearing roads of snow. *262
 Cooling-system condenser. *262
 Driver, protection for. *60
 Electric control for train of trucks. *317
 Electrics in S. Africa. 311
 Extension rims for sand. *516
 Good roads and gas bills. *262
 Hauling "kosher" meats. 404
 High distance transportation. *516
 Motor-driven commercial vehicle. *60, *143, *262, *404, *516, *662
 Packing cars for shipment. *207
 Radium for rough work. *262
 Starter, non-electric. *462
 Steel-wheel conversion. *516
 Tower wagon for street lamps. *516
 Traffic, heavy, New York. 404
 Trailer, easily loaded. *262
 Truck as farm tractor. 262
 Universal joint. *60
 War trucks will not flood market. 662
USES OF.
 Gypsy caravan, modern. *404
 Street sweeper, power. 404
 Travelling restaurant. *662
AVIATION. See AERONAUTICS.
B
BACTERIA, sterilization by pressure. *693
BALLOONS. See AERONAUTICS.
BALL TRICKY. 610
BARBED WIRE, reclaiming. 578
BEAMS, REINFORCED CONCRETE. 281
BELTING SUBSTITUTES, Germany. 388
BELT replaced by steel bands. 23
BELTS, cost of slipping. *342
BICYCLE becomes ice-boat. *126
BIOGRAPHY, including OBITUARIES.
 Bryant, Isaac Hill. 184
 Clay, Francis W. H. 571
 Coglia, Jerome. 337
 Crookes, Sir William. *396
 Pickering, Edward C. 137
 Richard, Charles Brinkerhoff. 453
 Roosevelt, Theodore. 48
 Vinci, da, Leonardo. 23
BIRDS.
 Pheasants, sumptuous work on. 197
 Question of identity. *570
 Robbery, ornithological. 425
BLIND, better guide for. 169
BLIND-DEAF, talking glove for. *342
BLIND in testing laboratories. 655
BLIND, uniform type for. 113
BOATS. See MERCHANT MARINE, and MOTORBOATS.
BOILER PRESERVER. 128
BOILERS rolled 21 miles. 453, *601
BOOMERANG, mystery of. 175
BOXES, wooden, metal strapping on. 644
BOXWOOD, substitutes for. 223
BOY-POWER, HARNESING. *190
BOY SCOUT WEEK. 568
BRICK, good, from slag. 108
BRIDGES.
 Bridge without metal. *515
 Building Bridge by halves. *31
 Connecting Staten Island with Manhattan. *535, *545
 Construction, unusual. *539
 Lift bridge, well-equipped. *143
 Mayor of New York, to the. 568
 Novel bridge engineering. 365
 Piles, reinforcing. 569
 Quantity production. *79
 Raising railroad bridge. 569
 Relative efficiency, bridge and tunnel. *247, 248
 Strengthening old iron bridges. 25
 Terminal problem, New York. *256
BUILDING CONSTRUCTION.
 Building problem being solved. 505
 Croositing wood. 453
 Wooden lath netting. 453
C
CABLE TRACK, overhead, supported from both sides. *234
CALIPER cuts own scale. *322
CAMOUFLAGE. See also WAR, THE EUROPEAN.
 Visibility, increasing. *457
CANALS.
 Cape Cod Canal, taking over. 249
 Evaporation, Panama Canal. *403
CASINGS of non-ferrous alloys. 57
CASTOR BEAN and its uses. 528
CHEMISTRY.
 Automatic chemist, the. *548
 Chemical Foundation. 315
 Colloids at work. 252
 Labyrinth of chemistry. *205
 Non-poisonous chemicals. 532
 Picking up hot hand. *532
 Reconstruction, phases of. 552
 Reporters' chemistry. 252
 Research, Federal aid for. 58
 Review of year 1918. 9
 Service of the chemist. 58, 140, 252
 409, 518, 660
 U. S. Chemical Warfare Service. *318, *372
 U. S. Fixed Nitrogen Administration. 505
 War credits. 433
CIRCA REVEALED. *24
COAL. See FUELS, and MINES AND MINING.
COCOANUT OIL, handling. 205
COMPASSES, testing of. 165
COMPASS, THE WIRELESS. *291
CONCRETE.
 Concrete data. 627
 Electrolysis in concrete. 158
 Hardening, speeding up. 365
 Over-night concreting job. *79
 Water, how much? 365
COOTIE, eliminating the. *377
CORN CRIB, CONCRETE. 208
CORRESPONDENCE. 27, 97, 117, 169, 201, 225, 253, 285, 313, 337, 369, 429, *485, 509, 541, 573, 601, 625
COTTON.
 Adulteration, China. 341
 Tires, growing cotton for. *13
COTTON SEED. 225
D
DAMS.
 Flood gates, automatic. *71
 Tennessee's big dam. *632
DAYLIGHT saving plan, new. 315
DENTISTRY on a model. *294
DERRICK MAST, NATURAL. *13
DESK, BANK, NEW. *634
DESK, good-nurse school. *294
DISEASE. See MEDICINE AND SURGERY.
DISH MOP, sanitary. 610
DRIER, speeding up the. *492
DRILLING UPSIDE DOWN. *16
DUMPER CAR, BIGGEST. *363
DYES AND DYEING.
 Dye industry, our. 660
 Hemp braid dye. 23
 Sorghum as coloring material. 376
E
EARTH. See ASTRONOMY, GEOLOGY, etc.
EDUCATION.
 Round pegs and square holes. 92
EFFICIENCY. See INDUSTRY AND TRADE.
EGG-MAILING CASE. *584
EGG PRODUCTION and light. 272
ELECTRICITY.
 Arc lamp globes. 137
 Carbon arc light making. *492
 Electric lighting 40 years ago. 629
 Flood-lighting problems. 93
 Lamp, shock-proof tungsten. 649
 Mercury lamps. 64
 Moore light, efficiency of. 69
 Radium indicators. 425
 Searchlight unit, better. *657
MISCELLANEOUS.
 Accumulators, maintenance of. 93
 Aerial conductors of aluminum. 392
 Cable connector, simple. 69
 Cables, rubber substitutes for. 341
 Conductor, iron pipe as. 649
 Conduit "fishing" device. 93
 Dynamos, wind-driven. 23
 Electrical progress, China. *321
 Electric waves from tides. 68
 Electrolysis damage. 137
 Heater for medicinal solutions. 23
 Insulating materials. 69
 Insulator substitutes. 649
 Insulator failures. 21
 Lightning discharger, new. 425
 Loss, dielectric. 23
 Magnet meter. *101
 Magneto, rotary-pole. *34
 Metals, effects of pressure on. 659
 Pig, renewable fuse. 369
 Resistance of suspended wire. 369
 Resistance units, simple. 249
 Review of year 1918. 5
 Transformer for lead burning. *690
 Transformers, extinguishers for. 197
 Vacuum tube, new form. *579
 Variable resistance, new. 249
 Vibrating wires, effects in. 649
RAILWAYS.
 Escalators, station. *567
 Street car meters. 333
 Subways must be adjusted. 22
 Traction wheels, larger. 23
TELEGRAPH.
 Army work in France. 227
TELEPHONES.
 Loud-speaking telephone. *579
 More messages over wires. *90
 Radio telephone, Japan. 137
 Switchboard, huge. 481
 Talking through space. *370
ELECTROPLATING, applications of. 313
EMIGRATION after the war. 242
ENGINEERING.
 Ellis Island, growth of. *423, 428
 Engineering Index, the. 126
 Industrial democracy. 569
 Moving 300-ton container. 569
 Psychology in construction. 251
 Review of year 1918. 5
ENGINE, gasoline: how will it develop? *286
ESCALATORS, SUBWAY. *567
EUGENICS.
 Eugenic advice. 423
 Family traits, indexing. 365
 Field workers in eugenics. 484
 Training field workers. 378
EXPLORATION.
 Airplanes in Antarctic. 567
 Exploring by airplane. 165
 Mount Katmai expedition. 467
 Rice, Dr. Hamilton. 621
 Siberian coast explorations. 606
 Stefansson in the Arctic. *601
EXPLOSIVES.
 Continuous nitration. *31
 Sensitizing. 567
 Toluol and gas industries. 246
F
FACTORY AND THE HOME. 4
FILES, economical use of. 281
FINGER PRINT classification. 97, 260
FIRES AND FIRE PREVENTION.
 Factory smoking. 505
 High-pressure hydrant regulation. *234
 Paints, fire-retarding. 221
 Wireless incendiary, the. *638
 Wireless waves, fires from. 649
FISH AND FISHERIES.
 Color of fishes, studying. 481
 Marine algae of Pacific coast. 371
 Salmon on coast of Maine. 173
 Weeding out poisonous fishes. 328
FLAX: decorticating machine. 130
FLOOD PREVENTION PLAN.
 Miami. *282
FLORIDA, swamp lands in. 541
FLOTATION oils from crude tar. 371
FLUME, CONCRETE. 251
FLUORESCENT FLUIDS. 251
FLY HOUSE. *683
FOG SIGNAL machinery. 631
FOOD.
 Breal: why it gets stale. 184
 British national restaurant. 139
 Drying food, new process. *431
 Egg substitutes. 93
 Quinoa. 635
 Syrup from grapes. 185
 Whale fat for margarine. 281
FOREIGN TRADE. See INDUSTRY AND TRADE.
FORESTS. See TREES AND FORESTRY.
FOSSIL DEPOSITS, Nebraska. *483
FOSSIL MINE, CALIFORNIA. *15
FOSSILS from Rockies. 4
FOSSILS of eastern Colorado. *283
FOUNTAIN, electric-lamp. *101
FOUR DIMENSIONS of world of. 117
FUELS. See also AUTOMOBILES.
 Alcohol from lava and peat. 391
 Coal, grading, by air. 146
 Coal handling, huge bridge for. *163
 Coal storage under water. 359
 Coal supply, the world's. *170
 Coking, new process of. 165
 Colloidal fuel, advent of. 392
 Fuel from household waste. 356
 Fuel saving. 465
 "Liberty fuel". 119
 Oil fields, Alsace-Lorraine. 621
 Oil fuel, economy. 621
 Oil, how long, will last? 430
 Oil pipe line, Scotland. 163
 Oil tank, towed anywhere. *226
 Oil vs. coal for warships. 454
 Peat dug by electricity. 425
 Shale oil as business proposition. 438
 Solid fuel economy. *438
FURNACE workers, air screens for. 328
G
GANG DRILLS: new idea. *610
GAS: electric precipitation. 425
GASES, poison, shrink leather. *661
GAS industries and toluol. 240
GASOLINE ENGINE: how will it develop? *286
GAS PRODUCER, concrete-stave. 40
GEOGRAPHY.
 Journal of Geography. 113
 Learning with the fingers. 165
 S. African Geographical Society. 11
 Uruguay, official map of. 113
GEOLOGY.
 Earth.
 Burning canyon, California's. *639
 Lake Michigan encroachment. *687
 Mud geysers. 680
 Plant fossils and the past. 360
 Thirty million years ago. *682
EARTHQUAKES.
 Earthquakes in 1918. 93
VOLCANOES.
 Hot blast of volcanoes. 281
 Kalut, recent explosion of. *632
 Mt. Katmai explorations. 467
 Weather Bureau and volcanology. 423
GERMANY.
 From war to work. 536
GLASS.
 America's optical emancipation. *454
GLOVES, STEEL-GRIP. 273
GLUES, strength of. 457
GLUING: scratched vs. smoothing joints. 508
GOLD DREDGING by-products. 631
GRAVEL, MADE-TO-ORDER. 252
GRAVITY measurements of. 165
GRAVITY OBSERVATIONS. 567
GUNS. See ORDNANCE AND ARMOR.
 (Continued on page 704)

INDEX

Note.—Illustrated articles are marked with an asterisk (*). Look for the general subject rather than the supposed specific title of any article. Thus, "Aeronautics," "Automobiles," "Meteorology," "Panama Canal," etc., will give related articles much more quickly than by reference to the title.

- A**
ADDING MACHINE, MONSTER* 515
ADVERTISING.
 Monster adding machine. *315
 Stationary signs, animating. *322
AERONAUTICS. See also WAR, THE
ACCIDENTS.
 Christmas strutless biplane. 589
 How to make airplane safe. 225, 541
BALLOONS.
 Aerial bus. *632
 Aerial greyhounds of tomorrow. 391, 400
 Airship problem, solution of. 73
 Britain's monster dirigibles. 311
 Dirigibles, armed. *691
 Dirigibles, mooring towers for. 621
 Is dirigible outstripping air-
 plane? *365
 Life raft, emergency. 547
 Sins urged rigid airships. 333
 Trans-Atlantic dirigible entry. *549
 Zeppelin sheds, Germany. *343
CONSTRUCTION.
 Airplane timber, our. 113
 Ford of the air. 113
 Instability of our airplanes. 118
 Martindale trans-Atlantic. *469
 Propellers, molded. *311
 Propellers, waterproofing. 249
 Testing to preclude accidents. 249
 To make airplanes safe. 483, 573
 Trans-Atlantic flight airplanes. *202
 Wings of metal. *95
FLIGHTS, ETC.
 Airplane parachute prize. 113
 Airplanes for trans-Atlantic flight. *202
 Altitude record, new. 165, 649
 Always on its toes. 648
 America flies the Atlantic. *904
 Chicago-New York flight. 481
 Cockpit of trans-Atlantic sea-
 planes. *547
 Crossing highest Andes. 113
 England to India by airplane. 461
 Lessons of the trans-Atlantic. 306
 London-Cape Town flight. 393
 Naval plans for trans-Atlantic. 311
 Navy's bid for trans-Atlantic. *479
 Passenger-carrying record. 649
 Pioneers flight, London. 649
 Race to the North Pole. 69
 Record of 150 loops. 113
 Safety and comfort competition. 649
 Small airplanes and trans-Atlantic
 flight. *427
 Trans-Atlantic dirigible entry. *333
 Trans-Atlantic flights, fares for. 393
 Trans-Atlantic flight, 190, 332, 680
 Trans-Atlantic flight, oddities of. 574
 Trans-Atlantic hoax. 117
 Trans-Atlantic, non-stop. *651
 Trans-Atlantic seaplane of future. *633
 Weather man and ocean flying. 452
GENERAL.
 Aerial police. 307
 Airplane express. 163
 Airplane, launching, from air-
 ship. *111
 Airplane research of value in other
 fields. 674
 Airplanes for sustenance. 404
 Airplanes, tractors to haul. 404
 Airship vs. airplane. 908
 Air-traffic regulation. 481
 Altitude—effect on eye. 21
 British flying, future of. *259
 Civilian aviation. 309
 Civilian flying. 481
 Commercial planes. 249
 England-Belgium service. 311
 Every man's airplane. *203
 Exploring by airplane. 165
 Exposition, Aeronautical. 137
 Flying experience without leaving
 ground. *547
 Free as air. 404
 Future of aircraft. 625
 German aircraft for peace. 89
 Giant Farman machine. 249
 Government sales of planes. 393
 Landing on a roof. *139
 Mail service, Army and. 112
 New York Exposition. 370, 290
 Passenger air liner. 481
 Passengers in place of bombs. *203
 Popularizing aviation. 424
 Review of year 1918. 9
 Safe plane at low price. *512
 Seaplanes for fishing. 332
 Speaking tube for airship. *346
 Stopping engine automatically
 when propeller breaks. *468
 Weather forecast for fliers. 69
 Wind currents, determination of. 620
 Wireless telephony. *95
MILITARY.
 Abandoned aviation fields. 569
 Aircraft, our giant. 7
 Airman's story, an. *426
 Airplanes by the hundreds. *173
 American naval aviators. 481
 Argentina's instructors. 649
 Battleplane armament. 569
 Brazil's aviation service. 569
 British air force. 249
 Casualties in A. E. F. 393
 England's aircraft industry. 314
 French record. 113
 French seaplanes, work of. *226
 German air service. 249
 Giant flying boats in aviation. 65
 Gotha for England. 311
 Making machine gun shoot pic-
 tures. *545
 Martin bombing plane. 165
 Navy airplanes in war, our. 188
 Operating room, flying. *813
 Our achievements in aviation. 65
 Our air service for peace. 393
 Peace treaty and German avia-
 tion. 649
 Pulling trigger by fluid pressure. *512
 Radio telephony: range finding. 569
 Seagull flies. 488
 Shooting stars. *79
 Torpedoplane of reality. *95
 Towing barge for naval planes. *909
 What are airmen going to do? 393
 Zeppelins as naval scouts. 425
- MOTORS.**
 Airplane and automobile. 136
 Battery vs. magnet. 95
 Langley-Manley engine. 625
 Self-starter of Liberty engine. 165
 "Supercharged" engine. *312
AGRICULTURE.
 Aerial police. 307
 Attachments, plow. 429
 Barn arrangements, efficient. 339
 Bean harvesting attachment. *607
 Boy-power, harnessing. 100
 Cattle food, seaweed as. 481
 Concrete pit saves money. *584
 Cornbinder loading device. *30
 Crop growing on contract. 536
 Ditch saving a farmer. 122
 Ditch, open, improving. *30
 Drain tile, cement. 30
 Dynamiting devastated orchards. 111
 Electro culture, theory of. 530
 Farming for returned soldiers. 309
 Farming implements. 169
 Farm kitchen equipment. 122
 Farm labor to cure cripples. *342
 Fertilizing, dynamite and. 429
 Gasoline horse, one-horse. *30
 Grain binder troubles. 607
 Hay-loading rack, movable. *607
 International Institute. 248, 281
 Irrigation scheme, ingenious. 457
 Keeping farm roads fit. *122
 Lady bugs to fight aphids. *507
 Locust, return of 17-year. *316
 Mechanical equipment of the farm
 *30, *122, *232, *376, *490, *607
 Motor cultivator, uses for. *232
 On leaf poisoning of animals. 369
 Plowing and harrowing at once. *610
 Roller bearings in machinery. 490
 Seeds, electrification of. 142
 Ships' ballast and plant pests. 569
 Shovel, automatic. 429
 Soil, atmosphere of the. 429
 Soil, how to build. 509
 Soil surveys, U. S. 113
 Supplying British farmer with
 sinews of war. 429
 Tanks turned into tractors. 113
 Tractor, rubber-tired. *122
 Tractors, official list of farm. 232
 Turnseed becomes a crop. 429
 Wartime agriculture, Gt. Britain. 26
 Weeds, killing, with steam. *599
 Wheat, much—little corn. 600
ALCOHOL.—an absurd figure. 691
ALCOHOL from white moss. 365
ALLOY, NEW. *207
ALPHABET, A PHONETIC. 253
ANIMALS.
 Dogs of war. *10
 Mules, shower bath for. *634
 Statues, new, islands of. 79
 Question of identity. *570
 Rabies and public health prob-
 lem. 644
 Society of Mammalogists. 505
 Ticks as disease carriers. *286
 Vampire bat. *254
 Water Monitor. 15
 Whale, "killer". *491
 Wild life reservations. 221
ARCHAEOLOGY.
 Archaeologist in Mesopotamia. *506
 Cihola revealed. *24
ARCTIC. See EXPLORATION.
ARMY. See NATIONAL DEFENSE, WAR-
 PANS, and U. S. THE EUROPEAN.
 Armies, French. *686
ART TREASURES, restoring. 167
ASH removal by suction. 661
ASTRONOMY.
 COMETS.
 Four periodic comets. 649
GENERAL.
 Adolfo Stahl lectures. 537
 American Astronomical Society. 49
 Bright night sky, England. 49
 British schools. 137
 "Bull," latest. 393
 Complaint from southern hemis-
 phere. 537
 Day, astronomical. 649
 Heavens month by month. *14, *102
 *224, *320, *466, *580, *692
 Lantern slides. 537
 Longitudes, Bureau of. 224
 Meteorites in strata. 537
 Observing, new ideas in. 49
 Review of year 1918. 49
 Sky, dark markings in. 649
 SEARCHLIGHTS.
 Mount Wilson drops "Solar". 311
 New observatory, Arizona. 197
PLANETS.
 Diameters, determining. 393
 Jupiter, prominence on. 393
 Planets month by month. *14, *102
 *224, *320, *466, *580, *692
 Venus. 393
STARS.
 Andromeda, variable in. 49
 Beta Cygni probably triple. 537
 Cepheid variables. 311
 Globular clusters. 311
 Helium star. 137
 Interstellar media. 197
 Mira Ceti, variations of. 49
 Nova, Andromeda nebula. 197
 Occulted by Martian atmosphere. 311
 Planetary nebulae, size of. 197
 Radial velocity, highest. 393
 Star colors. 679
 Southern double stars. 137
SUN.
 Corona observations. 393
 Solar rotation, problem of. 197
 Total eclipse of May 29th. 49, 311
 Weather data needed. 197
ATHLETES, AN ARMY OF how
 Uncle Sam has created. *114
AUTOMOBILES.
 ACCESSORIES AND HUNDRIES.
 Anti-freezing mixtures. 49
 Circuit, adjustable. *148
 Horn and lamp, combined. *79
 Jack, indoor. *693
 Lubricating the car. 113
 Oil vs. grease. 113
 Radiators, care of. 49
 Tools, special, for repair. 537
 Wheel that floats. 201
 Wick oiling for chassis. 453
ENGINES.
 "After the war" engines. 221
 Airplane and automobile. 136
 Airplane engines for cars. 221
 Airplane type, pleasure car. 221
 Compression gas, simple. 453
 Cooling system precautions. 333
 Crank case, breathing. 685
 Dual valves, adopts. 537
 Fuel heated three times. 60
 Kerosene engine, oil-cooled. 27
 Top speed, meaning of. 113
 Starting in cold weather. 221
 Starting trouble. 221
 Valve operating system deprecia-
 tion. 621
FUELS.
 Cheap fuel. 113
 Supply, declining. 220
GENERAL.
 Absence of freaks. 154
 Accident, odd. *307
 Activity in invention. 311
 Buying, stimulating. 311
 Careless America. 137
 Frankships, finishing. 148
 Far Eastern demands. *124
 First aid to motorists. *584
 Lighting a driveway. *486
 Lubricant testing machine. 621
 150 miles per hour on wheels. *223
 Post-war models, England. 49
 Public interest in automobiles. 136
 Trucks, circumventing. 393
 Tourist, motor, for the. *623
 Trade reports, optimistic. 621
PLEASURE CARS.
 Cheap cars for Europe. 311
 Closed bodies popular. 537
 Plan \$250 automobile. 311
TRUCKS.
 Armor for the tire. *532
 Capitalizing rare experience. 311
 Testing tires on factory roof. *461
 Tire mileage sells cars. 393
TRACTORS.
 After-war demand, Italy. 404
 Airplane tractors to haul. 404
 Bull gear drive housing. 148
 Climbing Mt. Wilson. 148
 Dynamometer, new tractor. *376
 Farm tractors, official list. 232
 Tank: invention that won war. *438
 Tank man's story. *482
 Tanks turned into farm tractors. 113
 Teaching wounded soldiers. *91
 Track-laying tractor, new. *662
TRUCKS.
 Clearing roads of snow. *262
 Cooling-system condenser. *262
 Driver, protection for. *60
 Electric control for train of
 trucks. *317
 Electrics in S. Africa. 311
 Extension rims for sand. *516
 Good roads and gas bills. *262
 Hauling "kosher" meats. 404
 High distance transportation. *516
 Motor-driven commercial vehicle. 60, *143, *262, *404, *516, *662
 Packing cars for shipment. *207
 Radium for rough work. *262
 Starter, non-electric. *462
 Steel-wheel conversion. *516
 Tower wagon for street lamps. 404
 Traffic, heavy, New York. 404
 Trailer, easily loaded. *262
 Truck as farm tractor. 262
 Universal joint. *60
 War trucks will not flood market. 662
USES OF.
 Gypsy caravan, modern. *404
 Street sweeper, power. 404
 Travelling restaurant. *662
AVIATION. See AERONAUTICS.
B
BACTERIA, sterilization by pres-
 sure. *693
BALLOONS. See AERONAUTICS.
BALL TRICKY. 610
BARBED WIRE, reclaiming. 578
BEAMS, REINFORCED CON-
CRETE. 281
BELTING SUBSTITUTES, Ger-
many. 388
BELT replaced by steel bands. 23
BELTS, cost of slipping. *342
BICYCLE becomes ice-boat. *126
BIOGRAPHY, including OBITU-
ARIES.
 Bryant, Isaac Hill. 184
 Clay, Francis W. H. 571
 Coglia, Jerome. 337
 Crookes, Sir William. *396
 Pickering, Edward C. 137
 Richard, Charles Brinkerhoff. 453
 Roosevelt, Theodore. 48
 Vinci, da, Leonardo. 23
BIRDS.
 Pheasants, sumptuous work on. 197
 Question of identity. *570
 Robbery, ornithological. 425
BLIND, better guide for. 169
BLIND-DEAF, talking glove for. *342
BLIND in testing laboratories. 655
BLIND, uniform type for. 113
BOATS. See MERCHANT MARINE, and
MOTORBOATS.
BOILER PRESERVER. 128
BOILERS rolled 21 miles. 453, *601
BOOMERANG, mystery of. 175
BOXES, wooden, metal strapping on. 644
BOXWOOD, substitutes for. 223
BOY-POWER, HARNESING. *190
BOY SCOUT WEEK. 568
BRICK, good, from slag. 108
BRIDGES.
 Bridge without metal. *515
 Building Bridge by halves. *31
 Connecting Staten Island with
 Manhattan. *535, *545
 Construction, unusual. *539
 Lift bridge, well-equipped. *143
 Mayor of New York, to the. 568
 Novel bridge engineering. 365
 Piles, reinforcing. 569
 Quantity production. *79
 Raising railroad bridge. 569
 Relative efficiency, bridge and
 tunnel. *247, 248
 Strengthening old iron bridges. 25
 Terminal problem, New York. *256
BUILDING CONSTRUCTION.
 Building problem being solved. 505
 Croositing wood. 453
 Wooden lath netting. 453
C
CABLE TRACK, overhead, sup-
ported from both sides. *234
CALIPER cuts own scale. *322
CAMOUFLAGE. See also WAR, THE
EUROPEAN.
 Visibility, increasing. *457
CANALS.
 Cape Cod Canal, taking over. 249
 Evaporation, Panama Canal. *403
CASINGS of non-ferrous alloys. 57
CASTOR BEAN and its uses. 528
CHEMISTRY.
 Automatic chemist, the. *548
 Chemical Foundation. 315
 Colloids at work. 252
 Labyrinth of chemistry. *205
 Non-poisonous chemicals. 532
 Picking up hot hand. *532
 Reconstruction, phases of. 552
 Reporters' chemistry. 252
 Research, Federal aid for. 58
 Review of year 1918. 9
 Service of the chemist. 58, 140, 252
 409, 518, 660
 U. S. Chemical Warfare Service. *318, *372
 U. S. Fixed Nitrogen Administra-
 tion. 505
 War credits. 433
CIRCA REVEALED. *24
COAL. See FUELS, and MINES AND
MINING.
COCOANUT OIL, handling. 205
COMPASSES, testing of. 165
COMPASS, THE WIRELESS. *291
CONCRETE.
 Concrete data. 627
 Electrolysis in concrete. 158
 Hardening, speeding up. 365
 Over-night concreting job. *79
 Water, how much? 365
COOTIE, eliminating the. *377
CORN CRIB, CONCRETE. 208
CORRESPONDENCE. 27, 97, 117,
 169, 201, 225, 233, 285, 313, 337, 369,
 429, *485, 509, 541, 573, 601, 625
COTTON.
 Adulteration, China. 341
 Tires, growing cotton for. *13
COTTON SEED. 225
D
DAMS.
 Flood gates, automatic. *71
 Tennessee's big dam. *632
DAYLIGHT saving plan, new. 315
DENTISTRY on a model. *294
DERRICK MAST, NATURAL. *13
DESK, BANK, NEW. *634
DESK, good-sense school. *294
DISEASE. See MEDICINE AND SURGERY.
DISH MOP, sanitary. 610
DRIER, speeding up the. *492
DRILLING UPSIDE DOWN. *16
DUMPER CAR, BIGGEST. *363
DYES AND DYEING.
 Dye industry, our. 660
 Hemp braid dye. 23
 Sorghum as coloring material. 376
E
EARTH. See ASTRONOMY, GEOLOGY,
 etc.
EDUCATION.
 Round pegs and square holes. 92
EFFICIENCY. See INDUSTRY AND
 TRADE.
EGG-MAILING CASE. *584
EGG PRODUCTION and light. 272
ELECTRICITY.
 ELECTRIC LIGHT.
 Arc lamp globes. 137
 Carbon arc light making. *492
 Electric lighting 40 years ago. 629
 Flood-lighting problems. 93
 Lamp, shock-proof tungsten. 649
 Mercury lamps. 64
 Moore light, efficiency of. 69
 Radium indicators. 425
 Searchlight unit, better. *657
MISCELLANEOUS.
 Accumulators, maintenance of. 93
 Aerial conductors of aluminum. 392
 Cable connector, simple. 69
 Cables, rubber substitutes for. 341
 Conductor, iron pipe as. 649
 Conduit "fishing" device. 93
 Dynamos, wind-driven. 23
 Electrical progress, China. *321
 Electric waves from tides. 68
 Electrolysis damage. 137
 Heater for medicinal solutions. 23
 Insulating materials. 69
 Insulator substitutes. 649
 Insulator failures. 21
 Lightning discharger, new. 425
 Loss, dielectric. 23
 Magnet meter. *101
 Magneto, rotary-pole. *34
 Metals, effects of pressure on. 659
 Pig, renewable fusc. 369
 Resistance of suspended wire. 369
 Resistance units, simple. 249
 Review of year 1918. 5
 Transformer for lead burning. *690
 Transformers, extinguishers for. 197
 Vacuum tube, new form. *579
 Viable resistance, new. 249
 Vibrating wires, effects in. 649
RAILWAYS.
 Escalators, station. *567
 Street car meters. 333
 Subways must be adjusted. 22
 Traction wheels, larger. 23
TELEGRAPH.
 Army work in France. 227
TELEPHONES.
 Loud-speaking telephone. *579
 More messages over wires. *90
 Radio telephone, Japan. 137
 Switchboard, huge. 481
 Talking through space. *370
ELECTROPLATING, applications of. 313
EMIGRATION after the war. 242
ENGINEERING.
 Ellis Island, growth of. *423, 428
 Engineering Index, the. 126
 Industrial democracy. 569
 Moving 300-ton container. 569
 Psychology in construction. 251
 Review of year 1918. 8
ENGINE, gasoline: how will it de-
velop? *286
ESCALATORS, SUBWAY. *567
EUGENICS.
 Eugenic advice. 423
 Family traits, indexing. 365
 Field workers in eugenics. 484
 Training field workers. 378
EXPLORATION.
 Airplanes in Antarctic. 567
 Exploring by airplane. 165
 Mount Katmai expedition. 467
 Rice, Dr. Hamilton. 621
 Siberian coast explorations. 606
 Stefansson in the Arctic. *601
EXPLOSIVES.
 Continuous nitration. *31
 Sensitizing. 567
 Toluol and gas industries. 246
F
FACTORY AND THE HOME. 4
FILES, economical use of. 281
FINGER PRINT classification. 97, 260
FIRES AND FIRE PREVENTION.
 Factory smoking. 505
 High-pressure hydrant regulation. 234
 Paints, fire-retarding. 221
 Wireless incendiary, the. *638
 Wireless waves, fires from. 649
FISH AND FISHERIES.
 Color of fishes, studying. 481
 Marine algae of Pacific coast. 371
 Salmon on coast of Maine. 173
 Weeding out poisonous fishes. 328
FLAX: decortiating machine. 130
FLOOD PREVENTION PLAN.
 Miami. *282
FLORIDA, swamp lands in. 541
FLOTATION oils from crude tar. 371
FLUME, CONCRETE. 251
FLUORESCENT FLUIDS. 251
FLY HOUSE. *683
FOG SIGNAL machinery. 631
FOOD.
 Breal: why it gets stale. 184
 British national restaurant. 139
 Drying food, new process. *431
 Egg substitutes. 93
 Quinoa. 635
 Syrup from grapes. 185
 Whale fat for margarine. 281
FOREIGN TRADE. See INDUSTRY
 AND TRADE.
FORESTS. See TREES AND FORESTRY.
FOSSIL DEPOSITS, Nebraska. *483
FOSSIL MINE, CALIFORNIA. *15
FOSSILS from Rockies. 4
FOSSILS of eastern Colorado. *283
FOUNTAIN, electric-lamp. *101
FOUR DIMENSIONS, world of. 117
FUELS. See also AUTOMOBILES.
 Alcohol from lava and peat. 391
 Coal, grading, by air. 146
 Coal handling, huge bridge for. *163
 Coal storage under water. 359
 Coal supply, the world's. 170
 Coking, new process of. 165
 Colloidal fuel, advent of. 392
 Fuel from household waste. 356
 Fuel saving. 465
 "Liberty fuel". 119
 Oil fields, Alsace-Lorraine. 621
 Oil fuel, economy. 621
 Oil, how long, will last. *450
 Oil pipe line, Scotland. 163
 Oil tank, towed anywhere. *226
 Oil vs. coal for warships. 454
 Peat dug by electricity. 425
 Shale oil as business proposition. 443
 Solid fuel economy. *438
FURNACE workers, air screens for. 328
G
GANG DRILLS: new idea. *610
GAS: electric precipitation. 425
GASES, poison, shrink leather. *661
GAS industries and toluol. 240
GASOLINE ENGINE: how will it
develop? *286
GAS PRODUCER, concrete-stave. 40
GEOGRAPHY.
 Journal of Geography. 113
 Learning with the fingers. 165
 S. African Geographical Society. 11
 Uruguay, official map of. 113
GEOLOGY.
 EARTH.
 Burning canyon, California's. *639
 Lake Michigan encroachment. *687
 Mud geysers. 680
 Plant fossils and the past. 360
 Thirty million years ago. *682
EARTHQUAKES.
 Earthquakes in 1918. 93
VOLCANOES.
 Hot blast of volcanoes. 281
 Kalut, recent explosion of. *632
 Mt. Katmai explorations. 467
 Weather Bureau and volcanology. 423
GERMANY.
 From war to work. 536
GLASS.
 America's optical emancipation. *454
GLOVES, STEEL-GRIP. 273
GLUES, strength of. 457
GLUING: scratched vs. smoothing
joints. 508
GOLD DREDGING by-products. 631
GRAVEL, MADE-TO-ORDER. 252
GRAVITY measurements of. 165
GRAVITY OBSERVATIONS. 567
GUNS. See ORDNANCE AND ARMOR.
 (Continued on page 704)

INDEX

(Continued from page 704)

- HAIR**, trimming one's own. *103
HAMMERING HANDLER. *208
HARBORS, DOCKS, ETC.
 Baltic, new harbor on. *363
 British port, new. *368
 Dock gates, concrete. *433
 Falmouth, docks at. *509
 Port and harbor facilities. *68
 Port, a neglected. *490
 Port facilities, U. S. *425
 United States port in France. *598
HEALTH. See MEDICINE AND SURGERY.
HEATING AND VENTILATION.
 Electric heaters, Sweden. *537
 Heating systems, new-idea. *490
HICKORY-HANDLE SUBSTITUTES. *252
HISTORY, new chapter of remote. *670
HOSE SHOE. *604
HOUSING PROBLEM, New York. *510
HYDROPHONES. *229, *305
- I**
ICE, crystal structure of. *446
ILLUMINATION. See also ELECTRICITY.
 Animating stationary signs. *322
 Lamp, acetylene. *376
 Light and progress. *500
- INDUSTRY AND TRADE**.
 Accidents, fewer, now. *231
 Additions to Dept. of Commerce. *37
 Airplane research of value. *674
 Alsace-Lorraine, loss of. *188
 Argentine, like our office furniture. *124
 Bolshéviki, exporting the. *402
 Box handles of webbing. *650
 Brazil, opportunity in. *78
 British industries, reactivated. *402
 "Delenda est Carthago". *253
 British munitions. *375
 Commerce, renaissance of. *78
 Cooperation in reconstruction. *200
 Cripples, nearest jobs for. *23
 Danger in next 4 months. *37
 Disabled soldier problem. *284
 Dismantling French ruins. *264
 Electrical goods, France. *12
 Emergency Employment Committee. *428
 Employee, crucial week for. *44
 Employment, rules for. *307
 Europe, our correspondence in. *507
 Exporting, expert. *258
 Factory and the home. *4
 Foreign trade. *600
 French soldier, adaptable. *112
 Furniture, foreign trade in. *354
 Furniture for tropics. *384
 Game is on. *174
 Gas masks, peace use of. *403
 German art of make-believe. *160
 Honduras: American agencies. *173
 Industrial democracy and engineering. *253
 Industrial plants. *197
 Inventors, letters from. *150
 Manufacturers, letters from. *150
 Manufacturers, suggestions for. *290
 Non-acknowledgment of orders. *221
 Physical reconstruction. *201
 Precision block, American. *658
 Raw materials, prices of. *137
 Reconstruction. *38, *141, *200, *201, *228, *248, *250, *336, *375
 Reconstruction—American machinery. *48
 Reconstruction and industrial engineering. *159
 Reconstruction department. *296
 Reconstruction in England. *94, *141, *166, *198, *228, *250, *336, *375
 Reconstruction in France. *307, *456, *538, *577
 Reconstruction in United States. *540
 Reports, Dept. of Commerce. *606
 Sales force, increasing. *606
 Secretary of Labor's letter. *97
 Service flag, new. *146
 Shows, our, in Italy. *174
 Synthetic investigation. *201
 Tanks for disabled fighters. *365
 Trade literature to Canada. *514
 Travels of a trader. *514
 Venetian, progressive. *606
 Wanted: a manufacturer. *296
 War after the war, friendly. *652
 War-city, Norwegian. *167
 Women, limitations of. *597
 Women's work, daily. *597
 Woodworking machinery abroad. *514
 World in the remaking. *92
 World markets for American manufactures. *112, *178, *184, *174, *258, *321, *402, *464, *514, *606
- INFANT WELFARE**, Germany. *333
INSECTS. See also AGRICULTURE.
 House fly. *683
 Insects in amber. *333
 Locust, return of 17-year. *316
 Malaria, the carrier of. *622
 Ticks as disease carriers. *254
- INVENTION AND PATENTS**.
 Invention as foundation of nation's wealth. *625
 Inventions new and interesting. *16, *34, *90, *103, *126, *176, *208, *234, *294, *322, *346, *377, *438, *468, *492, *552, *554, *610, *634
 Inventions recently patented. *36
 *152, *178, *219, *298, *324, *348, *380, *410, *440, *470, *494, *554, *586, *634, *636
 Inventors, notes for. *610
 Patent decisions, recent. *120, *322, *560, *584, *603
 Patent Office as national asset. *642
 Patent relief, field for. *596
 Patents and profits. *572
 Patents, foreign, our. *104
 Scientific patents. *56
 Trademark registrations, international. *504
 Trademarks, farm. *19
 Trademark, Swiss national. *9
- IRON**.
 Acid-resisting iron. *336
 Changes in iron. *290
 Electric cast iron. *38
 Iron that can be whitened. *18
- IRRIGATION SCHEME**, ingenious. *47
- K**
 KESG, device for moving. *176
 KITES, AIRPLANE. *661
- L**
LAMP, ACETYLENE. *376
LANTERN burning gasoline. *232
LEAD BURNING, transformer for. *699
LEAD POISONING from bottles. *256
LEMON DROPS for Army. *23
LIBRARIES, ruined, Serbia. *657
LIFE TABLES, new. *509
LIGHT AND PROGRESS. *509
LIGHT, measuring. *327
LIBMS, ARTIFICIAL. *34
LINKS WITH THE PAST, our. *620
LINSEED OIL SUBSTITUTES. *48
LOCOMOTIVES. See RAILROADS.
LOGGING by electricity. *34
LOG HOUSE, COLOSSAL. *513
LOG RAFT for overseas. *59
LOGS UNDER WATER, storage of. *691
LUMBER PRODUCTION, 1918. *599
- M**
MAGNETIC PULLEYS. *59
MEDICINE AND SURGERY.
 Adenoid clubs. *23
 Bactericidal sunlight. *41
 Beriberi, infantile. *174
 Chloroform given by tube. *171
 Clinical thermometers, testing. *539
 Consumption, fake cures for. *23
 Dentistry on a model. *294
 Diphtheria fatalities. *23
 Doctor vs. malingerer. *115
 Fishes to fight malaria. *176
 Food truck beamed. *113
 Fund for medical research. *113
 Hookworm, prevention and cure. *334
 Hospital call switch. *333
 Hospital on wheels, model. *57
 Human reconstruction. *172
 Infantile paralysis. *453
 Influenza germ discovered. *92
 Influenza mystery deepens. *92
 Influenza—aphinx of disease. *203
 Limbs, phantom. *504
 Making over disabled doughboy. *542
 Malaria, the carrier of. *622
 Medical men, House of Com. *281
 Mental hygiene, problem of. *313
 Operating room, flying. *313
 Public health administration. *505
 Quilts, electrically-heated. *597
 Rabies and public health problem. *644
 Radiotherapeutics. *197
 Shell shock or neurosis. *451
 Sterilization of criminals. *333
 Stretcher, dividing. *80
 Stretching wheel for gauze. *57
 Surgical machinery. *760
 Surgical method, new. *289
 Teeth fitted with camera. *578
 Shells, demobilizing. *624
 Shells, unexploded, locating. *395
 Submarine dart. *287
MEGAPHONE, NOVEL. *548
MERCHANT MARINE.
 American operating program. *364
 Changing "Troy" to troopship. *333
 Cold plate bending, improvised. *110
 Compensation for buyers. *333
 Carved or "B" courses. *299
 Drydock shortage, New York. *505
 Electric welding construction. *199
 Electric welding tests. *93
 50-ft. ship, 44-ft. canal. *171, *309
 Fleet, how big is our. *392
 Great Lakes steamer, famous. *49
 Helping sailor in shipyard. *49, *373
 Hurley and shipping situation. *310
 Lifeboats, sub-chasers as. *601
 Liner, pioneer of Atlantic. *504
 Locomotive of the seas. *620, *628
 Merchant marine problem. *164
 Motor vessel, largest. *339
 Navy and the merchant marine. *249
 Paravane—a steel shark. *91
 Port, a new British. *368
 Repairing wooden ship with concrete. *49
 Reversing with rudder. *492
 Rivetless ships. *492
 Shipbuilding output, 1918. *425
 Ship-owners point of view. *504
 Shipping problem. *27
 Shipping situation, light on. *568
 Ships of "puffed brick". *314, *625
 Submarine war, cleaning up after. *638
 Tanker, largest. *49
 Torpedo protection, "bulge" as. *621
 Training for our merchant marine. *425
 "Vaterland" transformed. *434
 What shall we do with our ships? *648
- METAL HANDLING HOT**. *16
METAL, LARGE HOLES IN. *16
METEOROLOGY.
 British daily weather report. *597
 Clouds formed by airplanes. *601
 Fog-signal machinery. *621
 Flying, what weather man thinks of. *452
 Solar eclipse meteorology. *197
MICA SUBSTITUTES, "Pertinax". *674
MINE BARRAGE, North Sea. *250, *288
MINES—paravane protection. *91
MINES AND MINING.
 Coal-and-steam mine. *283
 Electric shovel. *488
 Experiment stations, new. *197
 Gold dredging, by-products from. *631
 Gold, miles of. *404
 Ore deposits, locating. *333
 Spitzbergen—mineral resources. *197
 In trenches at danger sign. *281
 Telescope for the earth. *581
 Tunnel, Roosevelt drainage. *331
 Tunnel, floating. *304
MIRAGE ROAD. *485
MOLASSES EXPLOSION, THAT. *253
MOLASSES TANK EXPLOSION. *253
MOTORCYCLES vs. bats. *197
MOTORBOATS. See also WARSHIPS.
 Propeller, housing. *468
MOTORCYCLE turned taxicab. *634
MOTOR CYCLE in the factory. *603
MOUNTAINEERING CLUBS. *169
MOUNTAINEERS OF TENNESSEE. *93
MOUNTAIN SIDE MOVING. *316
MOVING PICTURES.
 Camera for rapid-moving objects. *315
 Eyes, motion pictures and. *575
 German glass "film". *453
 Infrared film, Denmark. *281
 Picture colony under one roof. *651
 Suitcase laboratory. *543
 War, photographing the. *544
- MUSIC**.
 Periscope for musical director. *126
 Pipe organs, bamboo. *385
- N**
NATIONAL DEFENSE. See also AERONAUTICS, NAVAL AFFAIRS, ORDNANCE AND ARMOR, WARFARE, AND WARSHIPS.
 Army of athletes, Uncle Sam's. *114
 Army supply base, Brooklyn. *505
 Good job, well done. *505
 Personnel work, U. S. Army. *373
 Reserve officers, tribute to. *505
 S. A. C. C. salvage. *90
 Science in the war. *633
 There's nothing goes to waste. *86
NAUGHTINESS of nations. *533
NAVAL AFFAIRS.
 "Bluff" Navy. *104
 Cost of new 3-year program. *195, *204
 Hydrographic Office. *63
 Last year would rule the sea. *621
 Old names for new Navy. *27
 Peace Conference threatened. *4
 Review of year 1918. *5
 Sims in team-work for victory. *374
 Strong and adequate navy. *117
 Submarine heroism in Navy. *92
 French year program abandoned. *623
 To the Secretary of the Navy. *43
NEGROES IN UNITED STATES. *43
NEWSPAPER PRESSSES, largest. *431
NEW YORK, earliest plan of. *530
NITROGEN, fixation of. *91
NOTES AND QUERIES. *20, 190, 274, 419
- O**
OAK, KILN DRYING. *343
OCEAN CURRENTS. *535
ORDNANCE AND ARMOR. See also WARSHIPS.
 America's great effort in ordnance. *338, *432
 Army ordnance policy. *621
 Artillery in late war. *425
 Battleplane armament. *74
 Battleplane guns on West front. *123
 British and German gunnery. *334
 French get 75-mm. gun. *333
 Gun parts, how best treated. *333
 Guns for the fighting front. *54
 Listing ships for range. *219
 Maintaining ordnance material. *505
 Most powerful gun. *461
 Navy 7-inch caterpillar mount. *287
 121-mile gun. *331
 Relining, cover of. *333
 18-inch vs. 18-inch gun. *91
 Trench mortar regiment. *425
- PROJECTILES**.
 Ammunition returned from France. *621
 Shells, demobilizing. *624
 Shells, unexploded, locating. *395
 Submarine dart. *287
ORNAMENT in old prints, etc. *673
- P**
PACKAGES, BETTER. *343
PAPER.
 Eliminating static electricity. *146
 Recovery of paraffined waste. *475
PARAVANE, THE. *91
PARIS monuments, uncovering. *90
PATENTS. See INVENTION AND PATENTS.
PAYMENTS, temperature of. *621
PEACE CONFERENCE THREATENED. *4
PEACE PARLEY PROBLEMS. *8
PEACE UNCONSTITUTIONAL. *452
PERFUME MAKING, SIMPLE. *15
PHONOGRAPHS.
 Sound-box and horn discarded. *322
PHOTOGRAPHY. See also MOVING PICTURES.
 Machine gun shoots pictures. *545
 Photomicrography, improved. *176
 Physical fitness and camera. *578
 Plates, pressure marks on. *29
 Roll-film, safeguarding. *610
 Being the best power of. *453
PILING OF CONCRETE PILES. *487
PLANTS. See also AGRICULTURE.
 Do seeds breathe? *571
 Flora of the Philippines. *165
 Leaves, temperature of. *335
 Paradise Key. *539
 Plate that marks stones. *607
 Protector, plant. *610
PLATINUM SUBSTITUTES. *237
POTASH.
 Italian lavas, potash from. *309
PRECISION BLOCK, American. *639
PRINTING, largest presses. *451
PRINTING MACHINE, universal. *346
PROJECTILES. See ORDNANCE AND ARMOR.
PUBLIC SPEAKING, novelties in. *489
PUNCHES, HAND, new idea in. *634
PYROMETER, SIMPLE, EFFICIENT. *16
- R**
RADIO ACTIVITY, ABOUT. *317
RADIUM PRODUCTION, U. S.. *365
RAILROADS. See also ELECTRICITY.
 Car dumper, biggest. *363
 Car-loader that weighs load. *495
 Car movement—world's record. *49
 Clamps for derailed cars. *610
 Electrification, Italy. *281
 Ferry, England-France. *21
 Freight cars of concrete. *343
 Freight cars, when, bump. *602
 Rail ends, mending. *145
 Railroad problem, solution of. *112
 Rail sawing machine, portable. *438
 Shockless railroad crossing. *51
 Sleepers, improved. *31
 Standing train safety. *225
 Subway cars shipped on ower wheels. *242
 Terminal problem, New York. *256
 Ties, zinc chloride for. *355
 Tracks, electric heaters for. *597
 Waste, eliminating a. *176
RANGE, advantages of electric. *481
RANGE-FINDING, submarine. *67
RECONSTRUCTION. See also INDUSTRY AND TRADE.
 American machinery. *48
 England. *94, *141, *166, *198, *228, *259, *336, *375
 Europe, reconstruction in. *281
 France. *307, *456, *503, *577
 Industrial cooperation. *200
 Industrial engineer. *248
 Phases of reconstruction. *53
 Reconstruction department. *150, *296
- REVIEW OF THE YEAR 1918**. *5
RIVETS, new styles in. *548
ROCK.
 Bitumen, Dead Sea. *221
 Caterpillar grade in desert. *49
 Concrete for heavy traffic. *97
 Maradom roads, dustless. *569
 Making safety islands safe. *627
 Mechanical finishes for concrete. *377
 Motor tourist, for the. *326
 Our marked highways. *436
 Pavement, tearing up old. *294
 Road vs. load. *8
 Snow on highways. *113
 Snow roller, hard roads with. *377
ROPE, MANILA, BRITTLE. *281
ROUND PEGS AND SQUARE HOLES. *92
RUBBER.
 New sources, U. S. *425
- S**
SAFETY. See also FIRES, MERCHANT MARINE, AND MINES AND MINING.
 Coal cover, the. *505
 Gasoline tanks, empty. *23
 Goggles, use of. *355
 Safety engineering. *221
 Seafloods, care with. *335
SAFE, unsafe, for bonds. *150
SALVAGE, DEEP-SEA. *355
SAW that is different. *126
SAW, TOOTHLESS. *231
SCAFFOLDS. *507
SCIENCE.
 Carnegie Institution. *480
 German shackles, getting rid of. *22
 Getting behind the scenes. *539
 International Catalog. *425
 Mount Katmai expedition. *597
 National Physical Laboratory. *69
 Prison camps, science of. *333
 Research, stimulation of. *518
 Review of year 1918. *5
 Science and utility. *392
 Scientific insurgent, the. *230
 War, science in the. *653
- SCIENTIFIC AMERICAN**.
 Book catalog, new. *108
 Papers for the soldiers. *220
SCULPTURE, DRIED-APPLE. *255
SEA, VOICE OF THE. *70
SEARCHLIGHT MIRRORS. *691
"SECOND SIGHT". *283
SELENIUM in Germany. *507
SEX a relative condition. *453
SHIPS. See MERCHANT MARINE, AND WARSHIPS.
SHOE, fitting to soldier. *56
SHOOTING UNIVERSITY. *576
SIGNALS, SUBMARINE. *333
SODIUM CHLORIDE SOLUTIONS. *113
SOIL temperature survey. *481
SOLDERING DEVICE, electric. *333
SOLDERING: heating tip. *438
SOUND, STUDYING. *221
SPELLING, science of. *285
STARS. See ASTRONOMY.
STEAM-POWER ECONOMICS. *25
STEAM TURBINE, 100,000 h. p. *659
STEEL.
 Guns, steel for. *342
 Heat treatment as specialty. *310
 Magnetic analysis. *221
 Polyblend, use of. *563
 Photomicrography, improved. *176
 Rustless steel invention. *343, *360
 Scrap iron and steel. *597
 Spray-painting corrugated steel. *453
 Zirconium steel, new. *670
- SUBMARINES**. See WARSHIPS, AND WAR, THE EUROPEAN.
SUBW. NEW YORK. *22, *567.
SUN. See ASTRONOMY.
- T**
"TANKS." See AUTOMOBILES, AND WAR, THE EUROPEAN.
"TANK" HAULS BARGES. *93
TANNING BARK. *680
TASTE a chemical reaction. *173
TELEGRAPH. See ELECTRICITY, AND WIRELESS TELEGRAPHY.
TELEPHONES. See ELECTRICITY.
TEMPERATURES, weighing high. *430
TEMPERATURE, weighing, for blind. *80
TEXTILES.
 British textile industry. *684
 Dutch industry, new. *23
 Eliminating static electricity. *146
TIDE OBSERVATIONS. *355
TIMBER storage and decay. *339
TIN recovery from scrap. *40
TOOL STEEL SUBSTITUTE. *367
TORPEDO. See ORDNANCE AND ARMOR.
TRADE. See INDUSTRY AND TRADE.
TRADE MARKS. See INVENTION AND PATENTS.
TRAILS, FAMILY. *365
TREE AND FORESTRY.
 Coos County forests. *43
 Dendrograph, the. *365
 Forest fires, spontaneous. *47
 French forestry scheme. *221
 Pigeons for fire protection. *403
TUBE HOLDER, collapsible. *634
TUNGSTEN and steel industry. *158
TUNNELS.
 Canal Street tunnel. *337
 Channel tunnel, decide to build. *398
 Connecting Staten Island with Manhattan. *535, *545
 Deep-drainage tunnel. *331
 English tunnel to France by rail. *310
 English Channel tunnel. *339
 Gibraltar, tunnel at. *505
 Hudson River tunnel. *190
 Relative efficiency, bridge and tunnel. *247, *248
 Vehicular tunnel, Hudson River. *219, *222
TURBINE, STEAM, 100,000 h. p. *659
TURPENTINE in Germany. *321
- V**
VEHICLE stock, steaming of. *343, *350
VELOCITIES, fluid, measuring. *631
VENEREAL DISEASE. *475
VISIBILITY, increasing, through camouflage. *457
VITAL STATISTICS, United States. *93
- W**
WALNUT INDUSTRY, what machinery is doing for the. *51
WAR, THE EUROPEAN. See also AERONAUTICS, AUTOMOBILES, ORDNANCE AND ARMOR, WARSHIPS, ETC.
 Army auxiliary, traveling. *575
 Bagging an 11-inch gun. *93
 British munitions. *375
- WARFARE**. See also AERONAUTICS, NATIONAL DEFENSE, WARSHIPS, WAR, THE EUROPEAN, ETC.
 Camouflage, principles of. *76, *116, *106
 Cavalry not out of date. *333
 French Armies. *686
 Landmarks, phosphorescent. *571
 Listening for the enemy. *510
 Mine barrage, North Sea. *250, *288
 Mines, floating. *394
 Poison gas, humanity of. *310
 U. S. Chemical Warfare Service. *315, *372
 Wind currents, direction and velocity. *620
WARSHIPS. See also WAR, THE EUROPEAN, ETC.
 Battleships, etc.
 Battle-cruiser problem. *280
 Battle-cruiser "Ripulse". *257
 Battleship of future. *490
 British and German warships. *280
 British navy, new ships of. *654
 Destroyer, high speed. *679
 Design, war's influence on. *112
 Dreadnoughts, our latest. *621
 Fighting ships of the world. *524
 14-gun "Agincourt". *249
 French naval policy. *573
 "Hush" ships, later details. *249
 "Idaho," latest dreadnought. *430
 Jellies on Grand Fleet. *424
 Men versus ships. *425
 Monitors of present war. *227
 Need of fast armored ships. *333
 Oil vs. coal. *453
 Return of the American fleet. *33
 Strength of five leading powers. *52
 Two destroyers made one. *175
 U. S. "New Mexico". *340
- SUBMARINES**.
 Anti-submarine tactics. *67, *72, *77, *226, *229, *287, *335, *457, *505, *600, *621
 German dry dock, etc. *681
 German U-boats on exhibition. *595
 Hydrophone for locating subs. *226
 Peace Conference and submarine. *336
 Scrapping German U-boats. *506
 Sound detector, hunting with. *336
 Submarine blind and slow. *93
 Submarine range finding. *67
 Submarine situation. *198
- SUNDRY**.
 American "mystery" ships. *506, *600
 Decoy ships for submarines. *77
 "Eagle" boats. *50, *93, *257
 Oil tank, towed anywhere. *226
 Seaplane carrier, "Argus". *630
WASTE, A WASTON. *97
WASTE, WHERE NOTHING GOES TO. *96
WATER heated by electrolysis. *553
WATER POWER AND SUPPLY.
 Case for water power, the. *541
 Coal-black, white, green, blue. *220
 Drinking water, microscopic organisms in. *623
 High-pressure hydrant regulation. *234
 Main, raising 24-inch. *165
 Mains, cement joints for. *365
 Measuring evaporation, Panama. *403
 Milwaukee's supply. *165
 Righting tilted intake crib. *165
 Sahara Hydrological Station. *88
 Tanks of concrete staves. *25
- WEATHER**. See METEOROLOGY.
WELDING, arc, nomenclature. *537
WELDING, ELECTRIC. *24
WHEELS, steel, new process. *560
WINDMILLS of beauty. *515
WIRELESS TELEGRAPHY.
 Aerial, now selective. *537
 Aerials, trees as. *537
 Amateurs, wireless. *507, *688
 Amateur, the wireless. *253
 Amateur wireless, resumption. *195
 Amateur wireless, revival of. *424
 British air service radio. *197
 British radio schemes. *69
 Easy method of mastering. *481
 Equipment of "George Washington". *425
 Great Britain-Australia wireless. *249
 Incendiary, the wireless. *628
 Police wireless, New York. *137
 Principles of communication. *481
 Naval control of wireless. *23
 Receiver, automatic. *403
 Receiving messages on ribbon. *623
 Signaling and talking through space. *370
 Transmitter, improved. *23
 Trees for ears, with. *624
 Underground wireless. *197
 Wireless and morale. *69
 Wireless control in new dress. *507
 Wireless station, France. *499
- WIRE ROLLS, IRONING**. *346
WOMEN IN WAR WORK.
 Data on women's work. *50
 Heating rivets electrically. *249
 Limitations of women. *507
 WOOD ASH as a polish. *127
WOOD, BALSA. *597
- X**
X-RAYS.
 New industrial uses. *415
 Screen characteristics. *507
- Z**
ZION CANYON and Colob Plateau. *144
ZIRCONIUM STEEL. *670
ZOOLOGY, British Guiana. *365

